

202 Geometry Final Exam Topics (2nd Semester Objectives)

Chapter 6 (6.1-6.5)

Write ratios

Use properties of proportions

Identify similar polygons

Solve problems involving scale factors

Identify similar triangles

Use similar triangles to solve problems

Use proportional parts of triangles

Divide a segment into parts

Recognize and use proportional relationships of corresponding perimeters, angle bisectors, altitudes, and medians of similar triangles.

Chapter 7 (7.1-7.5)

Find the geometric mean between two numbers

Solve problems involving relationships between parts of a right triangle and the altitude to its hypotenuse

Use the Pythagorean Theorem and its converse

Use the properties of 45-45-90 and 30-60-90 triangles

Find trigonometric ratios using right triangles

Solve problems using trigonometric ratios

Solve problems involving angles of elevation and depression

Chapter 8 (8.1-8.6)

Find the sum of the measures of the interior angles of a polygon

Find the sum of the measures of the exterior angles of a polygon

Recognize and apply properties of the sides and angles of parallelograms

Recognize and apply properties of the diagonals of parallelograms

Recognize the conditions that ensure a quadrilateral is a parallelogram

Prove a set of points forms a parallelogram in the coordinate plane

Recognize and apply the properties of rectangles, rhombi, squares, and trapezoids

Determine whether parallelograms are rectangles, rhombi, or squares

Solve problems involving the medians of trapezoids

Chapter 10 (10.1-10.8)

Identify and use parts of a circle

Solve problems involving circumference

Recognize major arcs, minor arcs, semicircles, and central angles and their measures.

Find arc length

Recognize and use relationships between arcs and chords as well as between chords and diameters

Find measures of inscribed angles

Find measures of angles of inscribed polygons

Use properties of tangents

Solve problems involving circumscribed polygons

Find measures of angles formed by lines intersecting on the inside, outside, or on a circle

Find measures of segments that intersect in the interior of a circle

Find measures of segments that intersect in the exterior of a circle

Write the equation of a circle

Graph a circle on the coordinate plane

Chapter 11 (11.1-11.5)

Find perimeter and area of parallelograms

Find area of rectangles, squares, rhombi, triangles, trapezoids, kites, regular polygons, circles, irregular figures and irregular figures on a coordinate plane

Solve problems involving geometric probability

Solve problems involving sectors and segments of circles

Chapters 12 and 13

Find the lateral area, surface area, and volume of prisms, cylinders, pyramids, and cones

Find the surface area and volume of spheres and hemispheres

Find surface area and volume of composite solids

202 Final Exam Review

The following problems will cover topics from chapters 6 - 13. There are a large number of problems listed here. In addition to these problems, you can certainly redo any homework or class work problems.

Chapter 6 pg 765-766 (Similar Triangles)

- 6.1 1, 2, 4, 7
- 6.2 2
- 6.3 1 through 4
- 6.4 1 through 5
- 6.5 1, 2

Ch 11 p.776-777 (Area)

- 11.1 1-4, 6
- 11.2 1-5, 8, 9
- 11.3 1-3, 5-7
- 11.4 1-3, 5
- 11.5 1, 2, 5, 6

Ch 7 p.766-768 (Right Triangles)

- 7.1 7-12
- 7.2 1-4 Add is right, acute, or obtuse?
- 7.3 1-6
- 7.4 11-13
- 7.5 1-3

Ch 12 p. 778-780 (Lateral and Surface Area)

- 12.1 3-5
- 12.3 1-3, 6, 7
- 12.4 5-8
- 12.5 1-4
- 12.6 1-3, 5
- 12.7 1, 2, 5, 6

Ch 8 p.769-771 (Quadrilaterals)

- 8.1 1-3, 7-11
- 8.2 1-16
- 8.3 1-10
- 8.4 1-4, 7-18
- 8.5 1-8
- 8.6 1, 2, 5-8

Ch 10 p.773-776 (Circles)

- 10.1 1-4, 7-10
- 10.2 1-12
- 10.3 1-12
- 10.4 1-8
- 10.5 1-5
- 10.6 1-6
- 10.7 1-6
- 10.8 5-9, 11, 13

Ch 13 p. 780-781 (Volume)

- 13.1 1-5
- 13.2 1, 2, 4, 5
- 13.3 1-4

Answer Key

6-1

- 1) 84 feet
- 2) 25.6 inches, 38.4 inches
- 4) 3
- 7) 45 inches, 30 inches, 25 inches

6-2

- 2) yes $RSTU \sim VWXY$

6-3

- 1) $\triangle LNM \sim \triangle YXZ, SAS$

- 2) $\triangle ABC \sim \triangle TSR, AA$

- 3) $\triangle RTV \sim \triangle SQV, x = 3,$
 $RT = 27, SV = 30$

- 4) $\triangle MNL \sim \triangle PNO, x = 2.5,$
 $PN = 7.5, MN = 10.5$

6-4

- 1) $10\frac{2}{3}$
- 2) $x = 4, AD = 18,$
 $DR = 30, QR = 40$
- 3) 12
- 4) 5
- 5) 3.3

6-5

- 1) 45
- 2) 33

7.1
7. $\frac{\sqrt{3}}{4}; 0.4$

8. $\frac{\sqrt{6}}{2}; 1.2$

9. $\frac{\sqrt{7}}{10}; 0.3$

10. $8\sqrt{6}; 19.6$

11. $4\sqrt{2}; 5.7$

- 7.2
1. right
 2. acute
 3. acute
 4. right

- 7.3
- x ; y
1. 45 ; 13
 2. 12.5 ; $12.5\sqrt{3}$
 3. 15 ; $15\sqrt{2}$
 4. $16\sqrt{3}; 24$
 5. $50\sqrt{2}; 100$
 6. 18 ; $6\sqrt{3}$

- 7.4
11. 77.2
 12. 38.7
 13. 6.6

- 7.5
1. 14.9
 2. 153.8 ft
 3. 2052.6 ft

- 8.1
1. 4140
 2. 5040

3. 3600
7. 15
8. 30
9. 20
10. 156; 24
11. 152.3; 27.7

- 8.2
1. $\angle UTS$
 2. $\angle TSR; \angle TUR$
 3. \overline{ST}
 4. \overline{ST}
 5. $\triangle TUR$

6. \overline{VU}
7. 28
8. 28
9. 89
10. 91
11. 61
12. 63
13. 6
14. 4
15. 6
16. 11

- 8.3
1. no
 2. yes; diagonals bisect each other
 3. yes; definition of parallelogram.
 4. 9; 13
 5. 4; 1
 6. 3; 6
 7. yes
 8. no
 9. yes
 10. yes

- 8.4
1. 15
 2. 33
 3. 28
 4. 21
 7. 52

8. 38
9. 76
10. 104
11. 52
12. 52
13. 38
14. 104
15. 76
16. 38
17. 52
18. 90

- 8.5
1. 55
 2. 70
 3. 35
 4. 15
 5. 60
 6. 30
 7. 10.5
 8. 12

- 8.6
1. isosceles trapezoid
 2. trapezoid
 5. 18
 6. 19, 84, 144
 7. 18, 52, 128
 8. 15

- 10.1
1. $d = 36$ in.,
 $C = 36\pi$ in. (113.10)
 2. $r = 17.1$ ft
 $C = 34.2\pi$ ft (107.44)
 3. $r = 6$ m, $d = 12$ m
 4. $r = 13.50$ mi.,
 $d = 26.99$ mi.
 7. 10π in.
 8. $6\sqrt{2}\pi$ cm
 9. $12\sqrt{2}\pi$ yd
 10. $\sqrt{610}\pi$ m

10.2

1. 90
2. 23
3. 113
4. 157
5. 67
6. 157
7. 90
8. 65
9. 45
10. 335
11. 155
12. 245

10.3

1. 11
2. 11
3. 9
4. 9
5. 70
6. 60
7. 30
8. 35
9. 30
10. 15
11. 15
12. 15

10.4

answers are given in the numerical order of angles

1. 21,71,88
2. 60 each
3. 55,105,20,55, 105,20
4. 35,110,35,70, 55, 55,35,
- 110, 35, 55, 55, 70
5. 50,40,90, 90, 40, 50
6. 96,56,28,96,56,28
7. diameter of circle
8. 85

10.5

1. yes
2. no
3. 3
4. $5\sqrt{10}$
5. 8

10.6

1. 75
2. 142.5
3. 110
4. 20
5. 25
6. 10

10.7

1. 5
2. 6
3. 3
4. 3.0
5. 5.7
6. 2.2

10.8

5. $(x-6)^2 + (y-12)^2 = 49$
6. $(x-4)^2 + y^2 = 16$
7. $(x-6)^2 + (y+6)^2 = 121$
8. $(x+5)^2 + (y-1)^2 = 1$
9. Center (0,0); $r = 5$
11. Center (3,-1); $r = 3$
13. $r = 1$

11.1

1. $A = 150\sqrt{3} \text{ in}^2$ (259.8)
 $p = 70 \text{ in.}$
2. $A = 126\sqrt{2} \text{ ft}^2$ (178.2)
 $p = 74 \text{ ft}$
3. $A = 113.5 \text{ m}^2$; $p = 49 \text{ m}$
4. square; 4 u^2
6. parallelogram; 12 u^2

11.2

1. 432
2. $171\sqrt{3}$ (296.2)
3. $324\sqrt{3}$ (561.2)
4. 8
5. 37.5
8. 16
9. 8

11.3

1. 182.3 ft^2
2. $\frac{81\sqrt{3}}{4} \text{ in}^2$ (35.1)

3. 173.8 ft^2
5. 66.3 cm^2
6. 61.7 ft^2
7. 37.4 in^2

11.4

1. 187.2
2. 420
3. 88.3
5. 15.5

11.5

1. 62.8 in^2 ; 0.20
2. 87.3 in^2 ; 0.28
5. 54.5 u^2 ; 0.09
6. 47.6 u^2 ; 0.31

12.1

3-5 check with teacher if needed.

12.3

1. 96; 166
2. 180; 216
3. 216; 264
6. 3411.0; 4086.0
7. 7.5 in.

12.4

5. 51.8 cm^2
6. 1737.3 ft^2
7. 34.6 in^2
8. 3421.2 m^2

12.5

1. 175 cm^2
2. 853.4 in^2
3. 3032.7 m^2
4. 255.4 cm^2

12.6

1. 332.9 in^2
2. 2513.3 ft^2
3. 2191.9 cm^2
5. 260.2 cm^2

12.7

1. $180,955.7 \text{ ft}^2$
2. 5674.5 m^2
5. 47.5 cm^2
6. 805.4 in^2

13.1

1. $426,437.6 \text{ m}^3$
2. 5102.4 ft^3
3. 2160 in^3
4. 750 in^3
5. 970.9 cm^3

13.2

1. 62.5 ft^3
2. 4188.8 mm^3
4. 78.5 m^3
5. 207.8 m^3

13.3

1. $356,817.9 \text{ ft}^3$
2. 1.1 m^3
3. $10,289.8 \text{ mm}^3$
4. 14.1 cm^3

13.4

2. similar;
scale factor 2:17 ;
area ratio 4:289
volume
ratio: 8:4913
3. neither
4. congruent; all ratios are 1:1.